Wisconsin Voluntary Emission Reduction Registry Technical Workshop

VERR - what's in it for me?

-Makes good business sense
-Baseline protection
-Likelihood of required greenhouse gas emission reductions
-Development of cap and trade system
-Creation of credits & offsets for internal growth or for sale on the open market
-Anticipation of changes to greenhouse gas legislation

VERR - what's in it for me?

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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July 31, 2003

Mr. Tom Estock, Manager Corporate Environmental & Safety
Quad/Graphics
N 63 W23075 HYW 74
Sussex, WI 53089

Dear Mr. Estock:

Thank you for being the very first company to register voluntary emissions reductions on the new Wisconsin Voluntary Emissions Reduction Registry. Our website is now operational at www.dnr.state.wi.us/org/aw/air/registry/index.html. In reviewing it, I was pleased to learn about how Quad Graphics had cut VOC emissions by 1.75 tons by switching to low VOC content products used in the auto blanket wash on several of your presses. This represented a 93% reduction in VOC emissions.

These emission reductions will be a big help in our effort to attain the ozone standard and provide health air to all Wisconsin citizens. I extend my personal thanks to you in this effort.

Sincerely,

Lloyd Lewis Eagan

Lloyd Lewis Eagan
Director, Bureau of Air Management

Low VOC auto blanket wash project description

-Voluntary changeover

-29% VOC material to 2% VOC material

-Involved 7 offset presses in Sussex facility

-Material substitution started in January of 2002

-Resulted in significant decline in VOC emissions

Low VOC auto blanket wash project specifics

-VOC and weight information from vendor MSDS

-Material quantities taken from monthly solvent usage reports required by operating permits

-Emission baselines and reductions based on:

  -WDNR guidelines for determining emissions from lithographic printing (60% fugitives & 40% capture)

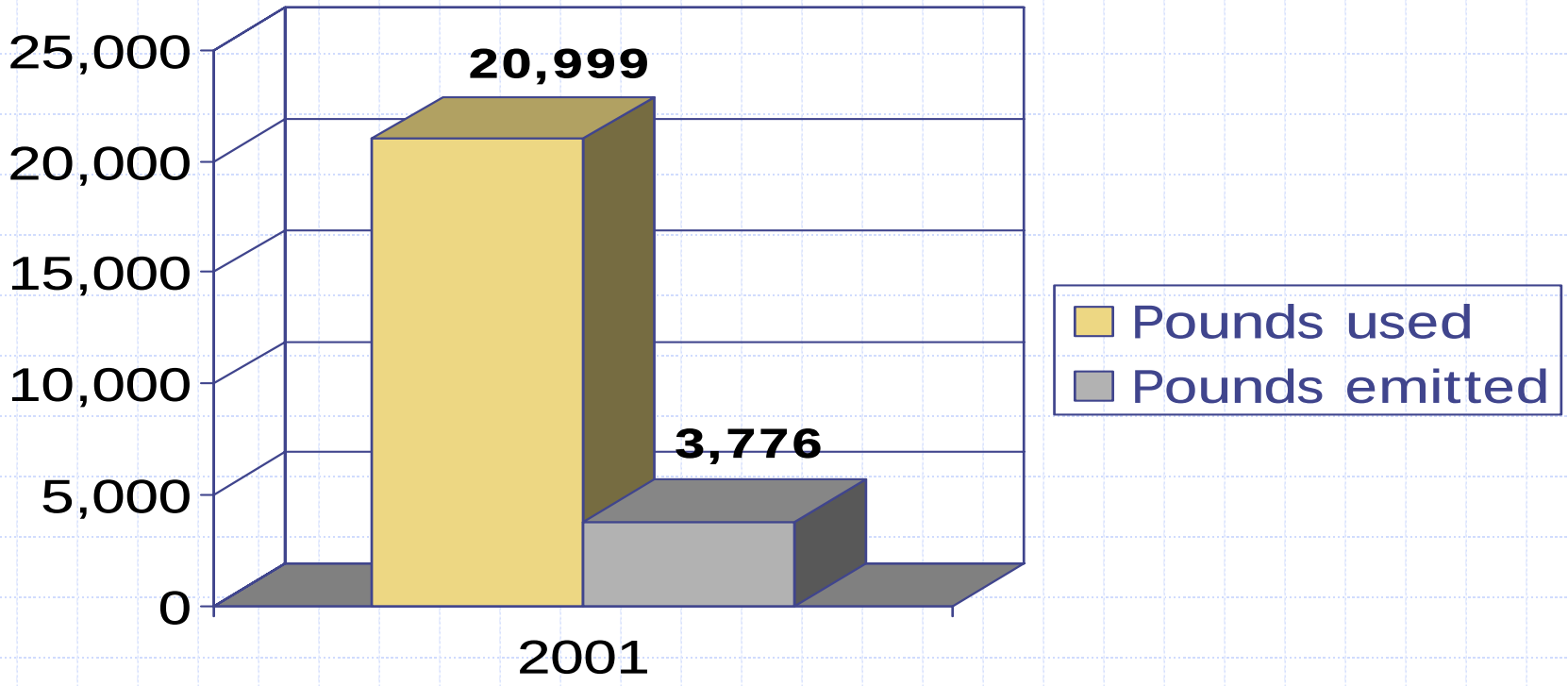
  -95% destruction efficiency as required by operating permits

Low VOC auto blanket wash project baseline emission calculation

-2001 auto blanket wash usage

  -2,876.53 gallons X 7.30 pounds per gallon X 29% VOC X 60% fugitive + 2,876.53 gallons X 7.30 X 29% X 40% capture X 5% (1 - .95 destruction efficiency) = 3,775.56 pounds

Low VOC auto blanket wash project baseline emissions

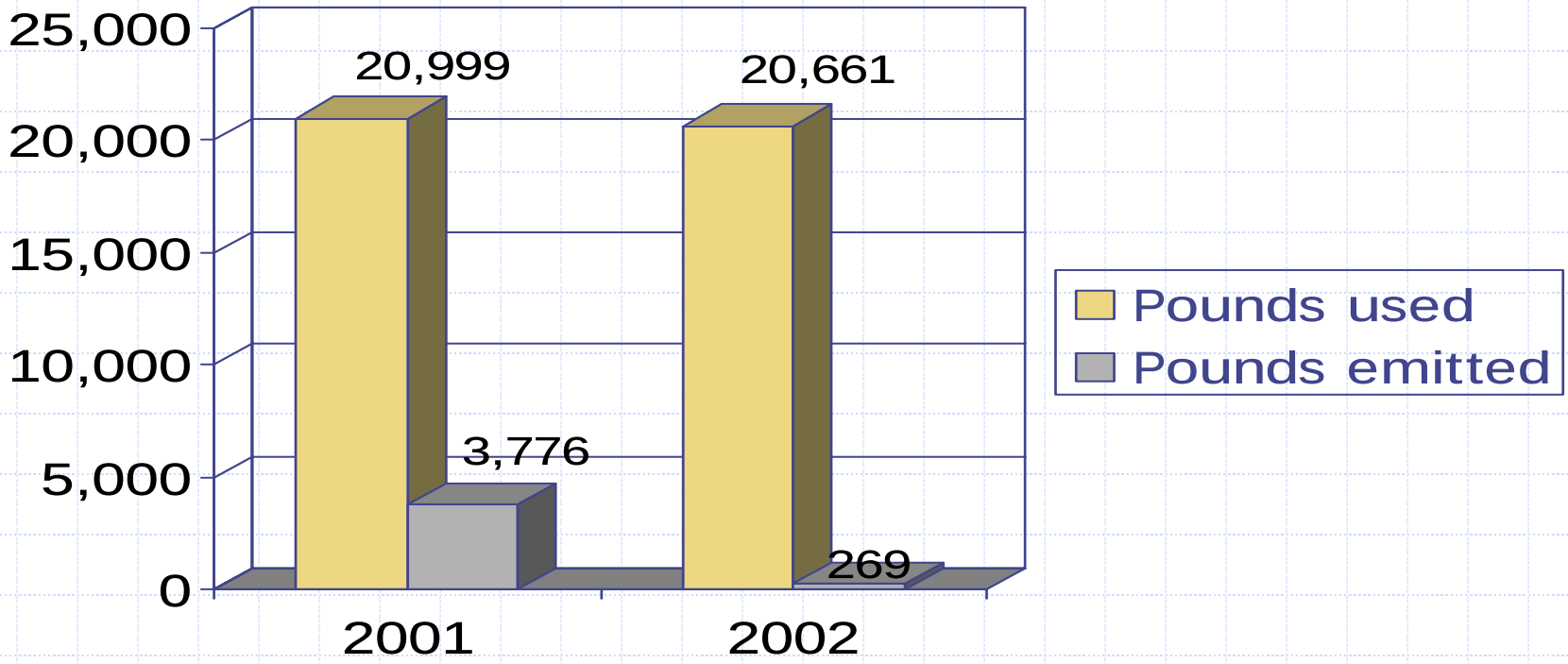


Low VOC auto blanket wash project emission calculation decrease

-2002 auto blanket wash usage

-2,830.33 gallons X 7.67 pounds per gallon X 2% VOC X 60% fugitive + 2,830.33 gallons X 7.67 X 2% X 40% capture X 5% (1 - .95 destruction efficiency) = 269.19 pounds

Low VOC auto blanket wash project emission reduction



Low VOC auto blanket wash project emission decline

-2002 vs. 2001 difference

- -3,775.56 pounds – 269.19 pounds = 3,506.37 pound difference
- -1.75 tons of VOC reduction
- -93.12% decline from baseline
- -+.31% change in production level

Other potential VERR projects

-Reduction in rotogravure press air emissions

  -PTE; 99% control

-Reduction in offset press air emissions

  -PTE; thermal oxidizers; material VOC substitution

-Reduction in finishing air emissions

  -Ink jet SRS; material VOC substitution

-Reduction in energy usage

  -Lighting retrofit; gas metering on press; HPA detection and repair; HVAC improvements; waste heat recovery; Energy Star products

Other potential VERR projects

-Recycling program

  -Applying USEPA emission factors for items we recycle (i.e., paper production, plastic production, etc.)

-Wastepaper reductions

-12-hour work shift benefits

-Duplainville Transport return load program

-Mass transit programs

-Parts washer program improvements

-Renewable energy programs & projects